lines 20-23: cancel and substitute --The novel features which are considered to be characteristic of the invention are set forth with particularity in the appended claims. The invention itself, however, in respect of its structure, construction and lay-out as well as manufacturing techniques, together with other objects and advantages thereof, will be best understood from the following description of preferred embodiments when read in connection with the appended drawings, in which:-- therefor;

page 23, line 32: insert --DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS.--;

page 28, lines 9-32: cancel;

page 29: cancel; and

page 35, line 1: chance "Abstract" to --ABSTRACT OF THE DISCLOSURE.--.

In the Claims:

Cancel claims 1-19 and substitute the following new claims:

20. (New) A method of determining the salinity of liquids by standard calibrated measurements of the electrical conductivity of a heated liquid sample in a measuring cell, comprising the steps of:

arranging the measuring cell in a constantly cooled and mechanically stirred as well as heatable water bath insulated to the exterior under control parametric consideration of the thermal conditions in the water bath;

measuring the actual temperature (ϑ_B) as an equivalent of the temperature (ϑ_P) of the sample at a high repetitive accuracy and with a maximum permissible lag error ($\Delta\vartheta_{max}$) between the temperature of the water bath and sample temperature (ϑ_B, ϑ_P) set by the required accuracy of determining the salinity (S), the control parameter for taking into account the thermal conditions being the time-wise drift ($\alpha = \Delta\vartheta_B/t$) of the temperature ($\vartheta_B$) derivable from the temperature measurements, the permissible maximum value (α_{max}) of which is defined as the quotient ($\alpha_{max} = \Delta\vartheta_{max}/\tau$) of the maximum permissible lag error

($\Delta\vartheta_{max}$) and a time constant (τ) of the measuring cell (MC) for a temperature equalization between the interior of the measuring cell and the water bath (WB), and

controlling the permissible maximum value of the time-wise drift (α_{max}) of the temperature (ϑ_B) of the water bath by maintaining a low-lag and quickly controllable compensation of the heat currents ($P\pm$) flowing into and out of the water bath (WB) such that the resulting quantity of the residual heat current (P_{rest}) does not exceed a predetermined maximum value ($P_{restmax}$).

21. (New) The method of claim 20, further comprising the step of maintaining the temperature (ϑ_B) of the water bath by the resultant residual heat current (P_{rest}) at the mean ambient temperature approximately with a deviation of $\pm$ 1 K.

22. (New) The method of claim 21, further comprising the step of utilizing the energy input into the water bath (WB) by the stirring (P_R) for the quick and low-lag controllable heating (P_H) thereof.

23. (New) The method of claim 22, further comprising the step of providing high heat resistance (R) of the exterior insulation (I) of the water bath (WB).

24. (New) The method of claim 23, further comprising the step of providing water bath cooling (PE) of high heat resistance (R) on the side of the bath.

25. (New) The method of claim 24, further comprising the step of adjusting the temperature of the liquid sample (ϑ_P) to the temperature (ϑ_B) of the water bath in a separately controlled advance bath (PB).

26. (New) The method of claim 25, further comprising the steps of carrying

out the measuring sequence automatically by a computer (PC) and of calculating the salinity (S) of the liquid sample (PROBE) from the measured values of temperature (ϑ_B) and conductivity (κ) on the basis of the UNESCO formula.

27. (New) An apparatus for determining the salinity of liquids by standard calibrated measurements of the electrical conductivity of a heated liquid sample, comprising:

a vial for holding a sample of the heated liquid;

a measuring cell arranged in a water bath;

means for transferring the heated liquid from the vial to the measuring cell;

means in the water bath for cooling, stirring and heating;

a heat exchanger;

insulation means disposed at an external wall of the water bath;

a control device for controlling the actual temperature (ϑ_b) of the water bath at high repetitive accuracy and at a maximum permissible lag error ($\Delta\vartheta_{max}$) between the water bath and sample temperature (ϑ_b, ϑ_p) determined by the accuracy demanded by the determination of salinity (S) as the equivalent of the temperature (ϑ_p) of the sample, the control parameter for taking into account the thermal conditions being the time-wise drift ($\alpha = \Delta\vartheta_B/t$) of the temperature ($\vartheta_b$) of the water bath the permissible maximum value (α_{max}) of which is defined as the quotient ($\alpha = \Delta\vartheta_{max}/\tau$) of the maximum permissible lag error ($\Delta\vartheta_{max}$) and a time constant (τ) of the measuring cell (MC) for a temperature balancing between the interior of the measuring cell and the water bath (WB), and

means for low-lag and quick adjustment of heat currents (P±) flowing into and out of the water bath (WB) for maintaining a permissible maximum value of the time-wise drift (α_{max}) of the temperature (ϑ_b) of the water bath such that the quantity of the resulting residual heat current (P_{rest}) does not exceed a

corresponding predetermined maximum value ($P_{restmax}$), and

a precision thermometer (TM) having a long term stability of less than 1 K per year and a time constant of less than .5 s for directly measuring the actual temperature ($\Delta\vartheta_B$) of the water bath (WB).

28. (New) The apparatus of claim 27, wherein the precision thermometer (TM) is provided with temperature dependent semiconductor resistors.

29. (New) The apparatus of claim 28, wherein the means for stirring provided for stirring and heating the water bath (WB) is structured as a rotationally controllable stirring propeller (Q) having a stirring vane (SP) similar to a ship's screw of high hydrodynamic efficiency which and is rotatable by a continuously controllable electric motor (EM) arranged at the exterior of the water bath (WB).

30. (New) The apparatus of claim 29, wherein at least one Peltier element provided with a thermal insulation (I) at the cooling side of the water bath (WB) is arranged at the wall of the water bath (WB).

31. (New) The apparatus of claim 30, wherein the measuring cell (MC) is provided with strip electrodes (SE) and has a volume in the range of 2 ml.

32. (New) The apparatus of claim 31, wherein a separate controllable advance bath (PB) with a preheat exchanger (PWT) is provided for heating the liquid sample (PROBE).

33. (New) The apparatus of claim 32, wherein for carrying out standard calibrations and measurements there a four-way valve (FV) is provided which comprises inputs respectively connected to a vial (A) of standard see water

(SSW), a bottle (B) of sample water (PROBE) and to cleaning and air conduits (H_2O, Air).

34. (New) The apparatus of claim 33, wherein a diaphragm pump (MP) is provided for evacuating the measuring cell (MC).

35. (New) The apparatus of claim 34, wherein a dosage pump (DP) is provided for filling the measuring cell (MC).

36. (New) The apparatus of claim 35, further comprising a computer (PC) for regulating the water bath, controlling the measuring sequence, and storing results.

37. (New) The apparatus of claim 36, further comprising a fully automatic precision balancing bridge for measuring the conductivity of the liquid sample (PROBE).

38. (New) The apparatus of claim 37, further comprising an indicator for signaling satisfied measuring conditions.

Remarks

Applicant has noted with appreciation that his nineteen claims submitted under cover of the preliminary amendment of 30 October 2001 would be allowable if rewritten to avoid alleged deficiencies under 35 U.S.C. §112. Accordingly, Applicant has withdrawn those nineteen claims and rewritten them as new claims 20-38 (see above).

In addition to the amendment to his claims, Applicant has amended his